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# OCTAVE<sup>®</sup>-S Implementation Guide, Version 1.0

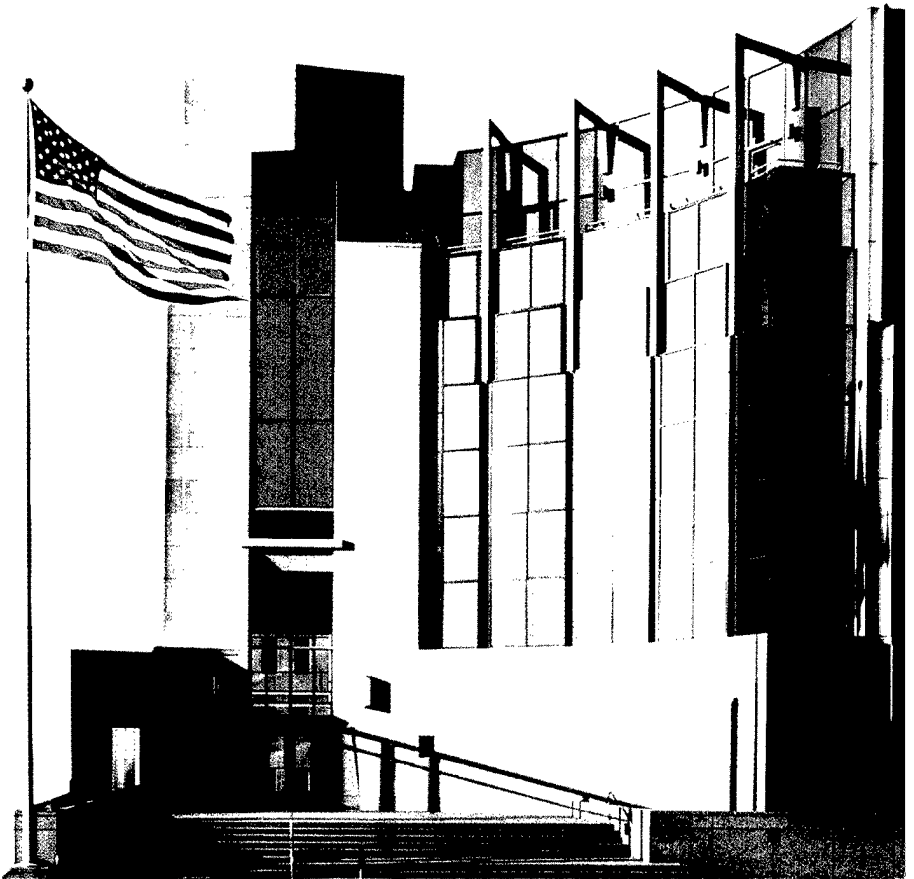
## Volume 4: Organizational Worksheets

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Audrey Dorofee  
James Stevens  
Carol Woody

*January 2005*

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HANDBOOK  
CMU/SEI-2003-HB-003





**Carnegie Mellon  
Software Engineering Institute**

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### **Volume 4: Organizational Worksheets**

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**Networked Systems Survivability Program**

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FOR THE COMMANDER



Christos Scondras  
Chief of Programs, XPB

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## About This Document

This document is Volume 4 of the *OCTAVE-S Implementation Guide*, a 10-volume handbook supporting the OCTAVE-S methodology. This volume provides the worksheets that are completed once for the organization during an evaluation. These worksheets reflect information that is independent of any specific asset.

The volumes in this handbook are

- *Volume 1: Introduction to OCTAVE-S* – This volume provides a basic description of OCTAVE-S and advice on how to use the guide.
- *Volume 2: Preparation Guidelines* – This volume contains background and guidance for preparing to conduct an OCTAVE-S evaluation.
- *Volume 3: Method Guidelines* – This volume includes detailed guidance for each OCTAVE-S activity.
- *Volume 4: Organizational Information Workbook* – This volume provides worksheets for all organizational-level information gathered and analyzed during OCTAVE-S.
- *Volume 5: Critical Asset Workbook for Information* – This volume provides worksheets to document data related to critical assets that are categorized as information.
- *Volume 6: Critical Asset Workbook for Systems* – This volume provides worksheets to document data related to critical assets that are categorized as systems.
- *Volume 7: Critical Asset Workbook for Applications* – This volume provides worksheets to document data related to critical assets that are categorized as applications.
- *Volume 8: Critical Asset Workbook for People* – This volume provides worksheets to document data related to critical assets that are categorized as people.
- *Volume 9: Strategy and Plan Workbook* – This volume provides worksheets to record the current and desired protection strategy and the risk mitigation plans.
- *Volume 10: Example Scenario* – This volume includes a detailed scenario illustrating a completed set of worksheets.





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## Abstract

The Operationally Critical Threat, Asset, and Vulnerability Evaluation<sup>SM</sup> (OCTAVE<sup>®</sup>) approach defines a risk-based strategic assessment and planning technique for security. OCTAVE is a self-directed approach, meaning that people from an organization assume responsibility for setting the organization's security strategy. OCTAVE-S is a variation of the approach tailored to the limited means and unique constraints typically found in small organizations (less than 100 people). OCTAVE-S is led by a small, interdisciplinary team (three to five people) of an organization's personnel who gather and analyze information, producing a protection strategy and mitigation plans based on the organization's unique operational security risks. To conduct OCTAVE-S effectively, the team must have broad knowledge of the organization's business and security processes, so it will be able to conduct all activities by itself.



# 1 Introduction

This document contains the Operationally Critical Threat, Asset, and Vulnerability Evaluation<sup>SM</sup> (OCTAVE®)-S worksheets that are completed once during an evaluation. The activities that require these worksheets are asset-independent, indicating an organizational focus and relevance across all critical assets.

Table 1 provides a brief introduction to the contents of this workbook, using activity step numbers as a key. For more details about how to complete each step, refer to the *OCTAVE®-S Method Guidelines*, which can be found in Volume 3 of the *OCTAVE®-S Implementation Guide*.

**Table 1: Worksheets Provided in This Workbook**

Step	Description	Worksheet	Activity	Pages
Step 1	Define a qualitative set of measures (high, medium, low) against which you will evaluate a risk's effect on your organization's mission and business objectives.	Impact Evaluation Criteria	Phase 1 Process S1 S1.1 Establish Impact Evaluation Criteria	5-18
Step 2	Identify information-related assets in your organization (information, systems, applications, people).	Asset Identification	Phase 1 Process S1 S1.2 Identify Organizational Assets	19-28
Step 3a	Determine to what extent each practice in the survey is used by the organization.	Security Practices	Phase 1 Process S1 S1.3 Evaluate Organizational Security Practices	29-60

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Table 1: Worksheets Provided in This Workbook (cont.)

Step	Description	Worksheet	Activity	Pages
Step 3b	As you evaluate each security practice area using the survey from Step 3a, document detailed examples of <ul style="list-style-type: none"> <li>what your organization is currently doing well in this area (security practices)</li> <li>what your organization is currently <i>not</i> doing well in this area (organizational vulnerabilities)</li> </ul>	Security Practices	Phase 1 Process S1 S1.3 Evaluate Organizational Security Practices	29-60
Step 4	After completing Steps 3a and 3b, assign a stoplight status (red, green, yellow) to each security practice area. The stoplight status should reflect how well you believe your organization is performing in each area.	Security Practices	Phase 1 Process S1 S1.3 Evaluate Organizational Security Practices	29-60
Step 5	Review the information-related assets that you identified during Step 2 and select up to five assets that are most critical to the organization.	Critical Asset Selection	Phase 1 Process S2 S2.1 Select Critical Assets	61-64
Step 19a	Document the classes of components that are related to one or more critical assets and that can provide access to those assets. Mark the path to each class selected in Steps 18a-18e. Note any relevant subclasses or specific examples when appropriate.	Infrastructure Review	Phase 2 Process S3 S4.2 Analyze Technology-Related Processes	65-70
Step 19b	For each class of components documented in Step 19a, note which critical assets are related to that class.	Infrastructure Review	Phase 2 Process S3 S4.2 Analyze Technology-Related Processes	65-70
Step 20	For each class of components documented in Step 19a, note the person or group responsible for maintaining and securing that class of component.	Infrastructure Review	Phase 2 Process S3 S4.2 Analyze Technology-Related Processes	65-70

*Table 1: Worksheets Provided in This Workbook (cont.)*

Step	Description	Worksheet	Activity	Pages
Step 21	<p>For each class of components documented in Step 19a, note the extent to which security is considered when configuring and maintaining that class. Also record how you came to that conclusion.</p> <p>Finally, document any additional context relevant to your infrastructure review.</p>	Infrastructure Review	<p>Phase 2</p> <p>Process S3</p> <p>S4.2 Analyze Technology-Related Processes</p>	65-70
Step 23	Define a qualitative set of measures (high, medium, low) against which you will evaluate the likelihood of a threat occurring.	Probability Evaluation Criteria	<p>Phase 3</p> <p>Process S4</p> <p>S4.2 Establish Probability Evaluation Criteria</p>	71-73



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## 2 Impact Evaluation Criteria Worksheet

Phase 1

Process S1

Activity S1.1

**Step 1**

Define a qualitative set of measures (high, medium, low) against which you will evaluate a risk's effect on your organization's mission and business objectives.



**Step 1****Reputation/Customer Confidence**

<b>Impact Type</b>	<b>Low Impact</b>
<i>Reputation</i>	Reputation is minimally affected; little or no effort or expense is required to recover.
<i>Customer Loss</i>	Less than _____% reduction in customers due to loss of confidence
<i>Other:</i>	
<i>Other:</i>	

# Impact Evaluation Criteria Worksheet

Reputation/Customer Confidence	
Medium Impact	High Impact
Reputation is damaged, and some effort and expense is required to recover.	Reputation is irrevocably destroyed or damaged.
_____ to _____ % reduction in customers due to loss of confidence	More than _____ % reduction in customers due to loss of confidence

Step 1	
Financial	
Impact Type	Low Impact
<i>Operating Costs</i>	Increase of less than _____% in yearly operating costs
<i>Revenue Loss</i>	Less than _____% yearly revenue loss
<i>One-Time Financial Loss</i>	One-time financial cost of less than \$ _____
<i>Other:</i>	

# Impact Evaluation Criteria Worksheet

		Financial
Medium Impact	High Impact	
Yearly operating costs increase by _____ to _____%.	Yearly operating costs increase by more than _____%.	
_____ to _____% yearly revenue loss	Greater than _____% yearly revenue loss	
One-time financial cost of \$_____ to \$_____	One-time financial cost greater than \$_____	

**Step 1****Productivity**

<b>Impact Type</b>	<b>Low Impact</b>
<i>Staff Hours</i>	Staff work hours are increased by less than _____% for _____ to _____ day(s).
<i>Other:</i>	
<i>Other:</i>	
<i>Other:</i>	

# Impact Evaluation Criteria Worksheet

		Productivity
Medium Impact	High Impact	
Staff work hours are increased between _____% and _____% for _____ to _____ day(s).	Staff work hours are increased by greater than _____% for _____ to _____ day(s).	

Step 1	
Safety/Health	
Impact Type	Low Impact
<i>Life</i>	No loss or significant threat to customers' or staff members' lives
<i>Health</i>	Minimal, immediately treatable degradation in customers' or staff members' health with recovery within four days
<i>Safety</i>	Safety questioned
<i>Other:</i>	

# Impact Evaluation Criteria Worksheet

Safety/Health	
Medium Impact	High Impact
Customers' or staff members' lives are threatened, but they will recover after receiving medical treatment.	Loss of customers' or staff members' lives
Temporary or recoverable impairment of customers' or staff members' health	Permanent impairment of significant aspects of customers' or staff members' health
Safety affected	Safety violated



**Step 1****Fines/Legal Penalties**

Impact Type	Low Impact
<i>Fines</i>	Fines less than \$_____are levied.
<i>Lawsuits</i>	Non-frivolous lawsuit or lawsuits less than \$_____are filed against the organization, or frivolous lawsuit(s) are filed against the organization.
<i>Investigations</i>	No queries from government or other investigative organizations
<i>Other:</i>	

# Impact Evaluation Criteria Worksheet

Fines/Legal Penalties	
Medium Impact	High Impact
Fines between \$_____ and \$_____ are levied.	Fines greater than \$_____ are levied.
Non-frivolous lawsuit or lawsuits between \$_____ and \$_____ are filed against the organization.	Non-frivolous lawsuit or lawsuits greater than \$_____ are filed against the organization.
Government or other investigative organization requests information or records (low-profile).	Government or other investigative organization initiates a high-profile, in-depth investigation into organizational practices.

Step 1	
Other	
Impact Type	Low Impact
A:	
B:	
C:	
D:	

Impact Evaluation Criteria Worksheet

		Other
Medium Impact	High Impact	



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## 3 Asset Identification Worksheet

Phase 1

Process S1

Activity S1.2

**Step 2**

Identify information-related assets in your organization (information, systems, applications, people).

**Step 2****Information, Systems, and Applications**

<b>System</b>	<b>Information</b>
<i>What systems do people in your organization need to perform their jobs?</i>	<i>What information do people in your organization need to perform their jobs?</i>

Information, Systems, and Applications	
Applications and Services	Other Assets
<i>What applications and services do people in your organization need to perform their jobs?</i>	<i>What other assets are closely related to these assets?</i>



**Step 2****Information, Systems, and Applications (cont.)**

<b>System</b>	<b>Information</b>
<i>What systems do people in your organization need to perform their jobs?</i>	<i>What information do people in your organization need to perform their jobs?</i>

Information, Systems, and Applications (cont.)	
Applications and Services	Other Assets
<i>What applications and services do people in your organization need to perform their jobs?</i>	<i>What other assets are closely related to these assets?</i>

**Step 2**

People	
People	Skills and Knowledge
<i>Which people have a special skill or knowledge that is vital to your organization and would be difficult to replace?</i>	<i>What are their special skills or knowledge?</i>

		People
Related Systems	Related Assets	
<i>Which systems do these people use?</i>	<i>Which other assets do these people use (i.e., information, services, and applications)?</i>	

**Step 2****People (cont.)**

<b>People</b>	<b>Skills and Knowledge</b>
<i>Which people have a special skill or knowledge that is vital to your organization and would be difficult to replace?</i>	<i>What are their special skills or knowledge?</i>

People (cont.)	
Related Systems	Related Assets
<i>Which systems do these people use?</i>	<i>Which other assets do these people use (i.e., information, services, and applications)?</i>



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## 4 Security Practices Worksheet

Phase 1

Process S1

Activity S1.3

<b>Step 3a</b>	Determine to what extent each practice in the survey is used by the organization.
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<b>Step 3b</b>	<p>As you evaluate each security practice area using the survey from Step 3a, document detailed examples of</p> <ul style="list-style-type: none"><li>• what your organization is currently doing well in this area (security practices)</li><li>• what your organization is currently <i>not</i> doing well in this area (organizational vulnerabilities)</li></ul>
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<b>Step 4</b>	After completing Steps 3a and 3b, assign a stoplight status (red, green, yellow) to each security practice area. The stoplight status should reflect how well you believe your organization is performing in each area.
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## 1. Security Awareness and Training

### Step 3a

Statement	To what extent is this statement reflected in your organization?			
Staff members understand their security roles and responsibilities. This is documented and verified.	Very Much	Somewhat	Not At All	Don't Know
There is adequate in-house expertise for all supported services, mechanisms, and technologies (e.g., logging, monitoring, or encryption), including their secure operation. This is documented and verified.	Very Much	Somewhat	Not At All	Don't Know
Security awareness, training, and periodic reminders are provided for all personnel. Staff understanding is documented and conformance is periodically verified.	Very Much	Somewhat	Not At All	Don't Know
Staff members follow good security practice, such as <ul style="list-style-type: none"> <li>• securing information for which they are responsible</li> <li>• not divulging sensitive information to others (resistance to social engineering)</li> <li>• having adequate ability to use information technology hardware and software</li> <li>• using good password practices</li> <li>• understanding and following security policies and regulations</li> <li>• recognizing and reporting incidents</li> </ul>	Very Much	Somewhat	Not At All	Don't Know

**1. Security Awareness and Training**

**Step 3b**

**What is your organization currently doing well in this area?**

**What is your organization currently *not* doing well in this area?**

**Step 4**

**How effectively is your organization implementing the practices in this area?**

☐ Red

☐ Yellow

☐ Green

☐ Not Applicable

**2. Security Strategy****Step 3a**

<b>Statement</b>	<b>To what extent is this statement reflected in your organization?</b>			
The organization's business strategies routinely incorporate security considerations.	Very Much	Somewhat	Not At All	Don't Know
Security strategies and policies take into consideration the organization's business strategies and goals.	Very Much	Somewhat	Not At All	Don't Know
Security strategies, goals, and objectives are documented and are routinely reviewed, updated, and communicated to the organization.	Very Much	Somewhat	Not At All	Don't Know

**2. Security Strategy**

**Step 3b**

**What is your organization currently doing well in this area?**

**What is your organization currently *not* doing well in this area?**

**Step 4**

**How effectively is your organization implementing the practices in this area?**

☐ Red

☐ Yellow

☐ Green

☐ Not Applicable

### 3. Security Management

#### Step 3a

Statement	To what extent is this statement reflected in your organization?			
Management allocates sufficient funds and resources to information security activities.	Very Much	Somewhat	Not At All	Don't Know
Security roles and responsibilities are defined for all staff in the organization.	Very Much	Somewhat	Not At All	Don't Know
All staff at all levels of responsibility implement their assigned roles and responsibility for information security.	Very Much	Somewhat	Not At All	Don't Know
There are documented procedures for authorizing and overseeing all staff (including personnel from third-party organizations) who work with sensitive information or who work in locations where the information resides.	Very Much	Somewhat	Not At All	Don't Know
The organization's hiring and termination practices for staff take information security issues into account.	Very Much	Somewhat	Not At All	Don't Know
The organization manages information security risks, including <ul style="list-style-type: none"> <li>• assessing risks to information security</li> <li>• taking steps to mitigate information security risks</li> </ul>	Very Much	Somewhat	Not At All	Don't Know
Management receives and acts upon routine reports summarizing security-related information (e.g., audits, logs, risk and vulnerability assessments).	Very Much	Somewhat	Not At All	Don't Know

**3. Security Management**

**Step 3b**

**What is your organization currently doing well in this area?**

**What is your organization currently *not* doing well in this area?**

**Step 4**

**How effectively is your organization implementing the practices in this area?**

☐ Red

☐ Yellow

☐ Green

☐ Not Applicable

#### 4. Security Policies and Regulations

##### Step 3a

Statement	To what extent is this statement reflected in your organization?
The organization has a comprehensive set of documented, current policies that are periodically reviewed and updated.	Very Much   Somewhat   Not At All   Don't Know
There is a documented process for management of security policies, including <ul style="list-style-type: none"> <li>• creation</li> <li>• administration (including periodic reviews and updates)</li> <li>• communication</li> </ul>	Very Much   Somewhat   Not At All   Don't Know
The organization has a documented process for evaluating and ensuring compliance with information security policies, applicable laws and regulations, and insurance requirements.	Very Much   Somewhat   Not At All   Don't Know
The organization uniformly enforces its security policies.	Very Much   Somewhat   Not At All   Don't Know

**4. Security Policies and Regulations**

**Step 3b**

**What is your organization currently doing well in this area?**

**What is your organization currently *not* doing well in this area?**

**Step 4**

**How effectively is your organization implementing the practices in this area?**

☐ Red

☐ Yellow

☐ Green

☐ Not Applicable



## 5. Collaborative Security Management

### Step 3a

Statement	To what extent is this statement reflected in your organization?
<p>The organization has policies and procedures for protecting information when working with external organizations (e.g., third parties, collaborators, subcontractors, or partners), including</p> <ul style="list-style-type: none"> <li>• protecting information belonging to other organizations</li> <li>• understanding the security policies and procedures of external organizations</li> <li>• ending access to information by terminated external personnel</li> </ul>	<p>Very Much    Somewhat    Not At All    Don't Know</p>
<p>The organization documents information protection requirements and explicitly communicates them to all appropriate third parties.</p>	<p>Very Much    Somewhat    Not At All    Don't Know</p>
<p>The organization has formal mechanisms for verifying that all third-party organizations, outsourced security services, mechanisms, and technologies meet its needs and requirements.</p>	<p>Very Much    Somewhat    Not At All    Don't Know</p>
<p>The organization has policies and procedures for collaborating with all third-party organizations that</p> <ul style="list-style-type: none"> <li>• provide security awareness and training services</li> <li>• develop security policies for the organization</li> <li>• develop contingency plans for the organization</li> </ul>	<p>Very Much    Somewhat    Not At All    Don't Know</p>

**5. Collaborative Security Management**

**Step 3b**

**What is your organization currently doing well in this area?**

**What is your organization currently *not* doing well in this area?**

**Step 4**

**How effectively is your organization implementing the practices in this area?**

☐ Red

☐ Yellow

☐ Green

☐ Not Applicable

## 6. Contingency Planning/Disaster Recovery

### Step 3a

Statement	To what extent is this statement reflected in your organization?			
An analysis of operations, applications, and data criticality has been performed.	Very Much	Somewhat	Not At All	Don't Know
The organization has documented, reviewed, and tested <ul style="list-style-type: none"> <li>contingency plan(s) for responding to emergencies</li> <li>disaster recovery plan(s)</li> <li>business continuity or emergency operation plans</li> </ul>	Very Much	Somewhat	Not At All	Don't Know
The contingency, disaster recovery, and business continuity plans consider physical and electronic access requirements and controls.	Very Much	Somewhat	Not At All	Don't Know
All staff are <ul style="list-style-type: none"> <li>aware of the contingency, disaster recovery, and business continuity plans</li> <li>understand and are able to carry out their responsibilities</li> </ul>	Very Much	Somewhat	Not At All	Don't Know

**6. Contingency Planning/Disaster Recovery**

**Step 3b**

**What is your organization currently doing well in this area?**

**What is your organization currently *not* doing well in this area?**

**Step 4**

**How effectively is your organization implementing the practices in this area?**

☐ Red

☐ Yellow

☐ Green

☐ Not Applicable

<b>7. Physical Access Control</b>
-----------------------------------

<b>Step 3a</b>
----------------

Statement	To what extent is this statement reflected in your organization?
<i>If staff from your organization is responsible for this area:</i>	
Facility security plans and procedures for safeguarding the premises, buildings, and any restricted areas are documented and tested.	Very Much    Somewhat    Not At All    Don't Know
There are documented policies and procedures for managing visitors.	Very Much    Somewhat    Not At All    Don't Know
There are documented policies and procedures for controlling physical access to work areas and hardware (computers, communication devices, etc.) and software media.	Very Much    Somewhat    Not At All    Don't Know
Workstations and other components that allow access to sensitive information are physically safeguarded to prevent unauthorized access.	Very Much    Somewhat    Not At All    Don't Know
<i>If staff from a third party is responsible for this area:</i>	
The organization's requirements for physical access control are formally communicated to all contractors and service providers that control physical access to the building and premises, work areas, IT hardware, and software media.	Very Much    Somewhat    Not At All    Don't Know
The organization formally verifies that contractors and service providers have met the requirements for physical access control.	Very Much    Somewhat    Not At All    Don't Know

**7. Physical Access Control**

**Step 3b**

**What is your organization currently doing well in this area?**

**What is your organization currently *not* doing well in this area?**

**Step 4**

**How effectively is your organization implementing the practices in this area?**

- ☐ Red
- ☐ Yellow
- ☐ Green
- ☐ Not Applicable

## 8. Monitoring and Auditing Physical Security

### Step 3a

Statement	To what extent is this statement reflected in your organization?
<i>If staff from your organization is responsible for this area:</i>	
Maintenance records are kept to document the repairs and modifications of a facility's physical components.	Very Much   Somewhat   Not At All   Don't Know
An individual's or group's actions, with respect to all physically controlled media, can be accounted for.	Very Much   Somewhat   Not At All   Don't Know
Audit and monitoring records are routinely examined for anomalies, and corrective action is taken as needed.	Very Much   Somewhat   Not At All   Don't Know
<i>If staff from a third party is responsible for this area:</i>	
The organization's requirements for monitoring physical security are formally communicated to all contractors and service providers that monitor physical access to the building and premises, work areas, IT hardware, and software media.	Very Much   Somewhat   Not At All   Don't Know
The organization formally verifies that contractors and service providers have met the requirements for monitoring physical security.	Very Much   Somewhat   Not At All   Don't Know

**8. Monitoring and Auditing Physical Security**

**Step 3b**

**What is your organization currently doing well in this area?**

**What is your organization currently *not* doing well in this area?**

**Step 4**

**How effectively is your organization implementing the practices in this area?**

☐ Red

☐ Yellow

☐ Green

☐ Not Applicable



## 9. System and Network Management

### Step 3a

Statement	To what extent is this statement reflected in your organization?			
<i><b>If staff from your organization is responsible for this area:</b></i>				
There are documented and tested security plan(s) for safeguarding the systems and networks.	Very Much	Somewhat	Not At All	Don't Know
Sensitive information is protected by secure storage (e.g., backups stored off site, discard process for sensitive information).	Very Much	Somewhat	Not At All	Don't Know
The integrity of installed software is regularly verified.	Very Much	Somewhat	Not At All	Don't Know
All systems are up to date with respect to revisions, patches, and recommendations in security advisories.	Very Much	Somewhat	Not At All	Don't Know
There is a documented and tested data backup plan for backups of both software and data. All staff understand their responsibilities under the backup plans.	Very Much	Somewhat	Not At All	Don't Know
Changes to IT hardware and software are planned, controlled, and documented.	Very Much	Somewhat	Not At All	Don't Know
IT staff members follow procedures when issuing, changing, and terminating users' passwords, accounts, and privileges. <ul style="list-style-type: none"> <li>Unique user identification is required for all information system users, including third-party users.</li> <li>Default accounts and default passwords have been removed from systems.</li> </ul>	Very Much	Somewhat	Not At All	Don't Know
Only necessary services are running on systems – all unnecessary services have been removed.	Very Much	Somewhat	Not At All	Don't Know
Tools and mechanisms for secure system and network administration are used, and are routinely reviewed and updated or replaced.	Very Much	Somewhat	Not At All	Don't Know
<i><b>If staff from a third party is responsible for this area:</b></i>				
The organization's security-related system and network management requirements are formally communicated to all contractors and service providers that maintain systems and networks.	Very Much	Somewhat	Not At All	Don't Know
The organization formally verifies that contractors and service providers have met the requirements for security-related system and network management.	Very Much	Somewhat	Not At All	Don't Know

**9. System and Network Management**

**Step 3b**

**What is your organization currently doing well in this area?**

**What is your organization currently *not* doing well in this area?**

**Step 4**

**How effectively is your organization implementing the practices in this area?**

☐ Red

☐ Yellow

☐ Green

☐ Not Applicable

<b>10. Monitoring and Auditing IT Security</b>
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<b>Step 3a</b>
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Statement	To what extent is this statement reflected in your organization?
<p><i>If staff from your organization is responsible for this area:</i></p> <p>System and network monitoring and auditing tools are routinely used by the organization. Unusual activity is dealt with according to the appropriate policy or procedure.</p>	<p>Very Much    Somewhat    Not At All    Don't Know</p>
<p>Firewall and other security components are periodically audited for compliance with policy.</p>	<p>Very Much    Somewhat    Not At All    Don't Know</p>
<p><i>If staff from a third party is responsible for this area:</i></p> <p>The organization's requirements for monitoring information technology security are formally communicated to all contractors and service providers that monitor systems and networks.</p>	<p>Very Much    Somewhat    Not At All    Don't Know</p>
<p>The organization formally verifies that contractors and service providers have met the requirements for monitoring information technology security.</p>	<p>Very Much    Somewhat    Not At All    Don't Know</p>

**10. Monitoring and Auditing IT Security**

**Step 3b**

**What is your organization currently doing well in this area?**

**What is your organization currently *not* doing well in this area?**

**Step 4**

**How effectively is your organization implementing the practices in this area?**

☐ Red

☐ Yellow

☐ Green

☐ Not Applicable

# 11. Authentication and Authorization

## Step 3a

Statement	To what extent is this statement reflected in your organization?
<p><b><i>If staff from your organization is responsible for this area:</i></b></p> <p>Appropriate access controls and user authentication (e.g., file permissions, network configuration) consistent with policy are used to restrict user access to information, sensitive systems, specific applications and services, and network connections.</p>	Very Much   Somewhat   Not At All   Don't Know
There are documented policies and procedures to establish and terminate the right of access to information for both individuals and groups.	Very Much   Somewhat   Not At All   Don't Know
Methods or mechanisms are provided to ensure that sensitive information has not been accessed, altered, or destroyed in an unauthorized manner. Methods or mechanisms are periodically reviewed and verified.	Very Much   Somewhat   Not At All   Don't Know
<p><b><i>If staff from a third party is responsible for this area:</i></b></p> <p>The organization's requirements for controlling access to systems and information are formally communicated to all contractors and service providers that provide authentication and authorization services.</p>	Very Much   Somewhat   Not At All   Don't Know
The organization formally verifies that contractors and service providers have met the requirements for authentication and authorization.	Very Much   Somewhat   Not At All   Don't Know

**11. Authentication and Authorization**

**Step 3b**

**What is your organization currently doing well in this area?**

**What is your organization currently *not* doing well in this area?**

**Step 4**

**How effectively is your organization implementing the practices in this area?**

☐ Red

☐ Yellow

☐ Green

☐ Not Applicable

## 12. Vulnerability Management

### Step 3a

Statement	To what extent is this statement reflected in your organization?
<p><i>If staff from your organization is responsible for this area:</i></p> <p>There is a documented set of procedures for managing vulnerabilities, including</p> <ul style="list-style-type: none"> <li>• selecting vulnerability evaluation tools, checklists, and scripts</li> <li>• keeping up to date with known vulnerability types and attack methods</li> <li>• reviewing sources of information on vulnerability announcements, security alerts, and notices</li> <li>• identifying infrastructure components to be evaluated</li> <li>• scheduling of vulnerability evaluations</li> <li>• interpreting and responding to the evaluation results</li> <li>• maintaining secure storage and disposition of vulnerability data</li> </ul>	<p>Very Much    Somewhat    Not At All    Don't Know</p>
Vulnerability management procedures are followed and are periodically reviewed and updated.	<p>Very Much    Somewhat    Not At All    Don't Know</p>
Technology vulnerability assessments are performed on a periodic basis, and vulnerabilities are addressed when they are identified.	<p>Very Much    Somewhat    Not At All    Don't Know</p>
<p><i>If staff from a third party is responsible for this area:</i></p> <p>The organization's vulnerability management requirements are formally communicated to all contractors and service providers that manage technology vulnerabilities.</p>	<p>Very Much    Somewhat    Not At All    Don't Know</p>
The organization formally verifies that contractors and service providers have met the requirements for vulnerability management.	<p>Very Much    Somewhat    Not At All    Don't Know</p>

**12. Vulnerability Management****Step 3b****What is your organization currently doing well in this area?****What is your organization currently *not* doing well in this area?****Step 4****How effectively is your organization implementing the practices in this area?**

- ☐ Red
- ☐ Yellow
- ☐ Green
- ☐ Not Applicable



<b>13. Encryption</b>
-----------------------

<b>Step 3a</b>
----------------

Statement	To what extent is this statement reflected in your organization?
<p><i>If staff from your organization is responsible for this area:</i></p> <p>Appropriate security controls are used to protect sensitive information while in storage and during transmission (e.g., data encryption, public key infrastructure, virtual private network technology).</p>	<p>Very Much   Somewhat   Not At All   Don't Know</p>
<p>Encrypted protocols are used when remotely managing systems, routers, and firewalls.</p>	<p>Very Much   Somewhat   Not At All   Don't Know</p>
<p><i>If staff from a third party is responsible for this area:</i></p> <p>The organization's requirements for protecting sensitive information are formally communicated to all contractors and service providers that provide encryption technologies.</p>	<p>Very Much   Somewhat   Not At All   Don't Know</p>
<p>The organization formally verifies that contractors and service providers have met the requirements for implementing encryption technologies.</p>	<p>Very Much   Somewhat   Not At All   Don't Know</p>

**13. Encryption****Step 3b**

**What is your organization currently doing well in this area?**

**What is your organization currently *not* doing well in this area?**

**Step 4**

**How effectively is your organization implementing the practices in this area?**

- ☐ Red
- ☐ Yellow
- ☐ Green
- ☐ Not Applicable

## 14. Security Architecture and Design

### Step 3a

Statement	To what extent is this statement reflected in your organization?
<p><i>If staff from your organization is responsible for this area:</i></p> <p>System architecture and design for new and revised systems include considerations for</p> <ul style="list-style-type: none"> <li>• security strategies, policies, and procedures</li> <li>• history of security compromises</li> <li>• results of security risk assessments</li> </ul>	<p>Very Much   Somewhat   Not At All   Don't Know</p>
<p>The organization has up-to-date diagrams that show the enterprise-wide security architecture and network topology.</p>	<p>Very Much   Somewhat   Not At All   Don't Know</p>
<p><i>If staff from a third party is responsible for this area:</i></p> <p>The organization's security-related requirements are formally communicated to all contractors and service providers that design systems and networks.</p>	<p>Very Much   Somewhat   Not At All   Don't Know</p>
<p>The organization formally verifies that contractors and service providers have met the requirements for security architecture and design.</p>	<p>Very Much   Somewhat   Not At All   Don't Know</p>

**14. Security Architecture and Design**

**Step 3b**

**What is your organization currently doing well in this area?**

**What is your organization currently *not* doing well in this area?**

**Step 4**

**How effectively is your organization implementing the practices in this area?**

☐ Red

☐ Yellow

☐ Green

☐ Not Applicable

<b>15. Incident Management</b>
--------------------------------

<b>Step 3a</b>
----------------

Statement	To what extent is this statement reflected in your organization?
<i>If staff from your organization is responsible for this area:</i>	
Documented procedures exist for identifying, reporting, and responding to suspected security incidents and violations.	Very Much   Somewhat   Not At All   Don't Know
Incident management procedures are periodically tested, verified, and updated.	Very Much   Somewhat   Not At All   Don't Know
There are documented policies and procedures for working with law enforcement agencies.	Very Much   Somewhat   Not At All   Don't Know
<i>If staff from a third party is responsible for this area:</i>	
The organization's requirements for managing incidents are formally communicated to all contractors and service providers that provide incident management services.	Very Much   Somewhat   Not At All   Don't Know
The organization formally verifies that contractors and service providers have met the requirements for managing incidents.	Very Much   Somewhat   Not At All   Don't Know

**15. Incident Management**

**Step 3b**

**What is your organization currently doing well in this area?**

**What is your organization currently *not* doing well in this area?**

**Step 4**

**How effectively is your organization implementing the practices in this area?**

- ☐ Red
- ☐ Yellow
- ☐ Green
- ☐ Not Applicable



---

## 5 Critical Asset Selection Worksheet

Phase 1

Process S2

Activity S2.1

**Step 5**

Review the information-related assets that you identified during Step 2 and select up to five (5) assets that are most critical to the organization.



**Step 5**

**Questions to Consider:**

*Which assets would have a large adverse impact on the organization if*

- *they are disclosed to unauthorized people?*
- *they are modified without authorization?*
- *they are lost or destroyed?*
- *access to them is interrupted?*

Critical Asset
1.
2.
3.
4.
5.

Notes



## 6 Infrastructure Review Worksheet

Phase 2

Process S3

Activity S3.2

<b>Step 19a</b>	Document the classes of components that are related to one or more critical assets and that can provide access to those assets. Mark the path to each class selected in Steps 18a-18e. Note any relevant subclasses or specific examples when appropriate.
-----------------	--

<b>Step 19b</b>	For each class of components documented in Step 19a, note which critical assets are related to that class.
-----------------	--

<b>Step 20</b>	For each class of components documented in Step 19a, note the person or group responsible for maintaining and securing that class of component.
----------------	---

<b>Step 21</b>	For each class of components documented in Step 19a, note the extent to which security is considered when configuring and maintaining that class. Also record how you came to that conclusion.
----------------	--

Finally, document any additional context relevant to your infrastructure review.

<b>Gap Analysis</b>	<p>Refine Phase 1 information based on the analysis of access paths and technology-related processes. Update the following, if appropriate:</p> <ul style="list-style-type: none"> <li>• Mark any additional branches of the threat trees when appropriate (Step 12). Be sure to document appropriate context for each branch you mark (Steps 13-16).</li> <li>• Revise documented areas of concern by adding additional details when appropriate. Identify and document new areas of concern when appropriate (Step 16).</li> <li>• Revise documented security practices and organizational vulnerabilities by adding additional details when appropriate. Identify and document new security practices and/or organizational vulnerabilities when appropriate (Step 3b).</li> <li>• Revise the stoplight status for a security practice when appropriate (Step 4).</li> </ul>
---------------------	---

Note  
In Step 19a,  
mark the path to  
each class  
selected in Steps  
18a-18e.

	Step 19a	Step 19b	Step 20																					
	<b>Class</b> Which classes of components are related to one or more critical assets?  (Document any relevant subclasses or specific examples when appropriate.)	<b>Critical Assets</b> Which critical assets are related to each class?  <table border="1"> <tr> <td>1.</td> <td>2.</td> <td>3.</td> <td>4.</td> <td>5.</td> </tr> </table>	1.	2.	3.	4.	5.	<b>Responsibility</b> Who is responsible for maintaining and securing each class of components?  																
1.	2.	3.	4.	5.																				
	<b>Servers</b> <table border="1"> <tr><td></td></tr> <tr><td></td></tr> <tr><td></td></tr> </table>				<table border="1"> <tr><td></td><td></td><td></td><td></td><td></td></tr> <tr><td></td><td></td><td></td><td></td><td></td></tr> <tr><td></td><td></td><td></td><td></td><td></td></tr> </table>																<table border="1"> <tr><td></td></tr> <tr><td></td></tr> <tr><td></td></tr> </table>			
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	<b>PDA's/Wireless Components</b> <table border="1"> <tr><td></td></tr> <tr><td></td></tr> <tr><td></td></tr> </table>				<table border="1"> <tr><td></td><td></td><td></td><td></td><td></td></tr> <tr><td></td><td></td><td></td><td></td><td></td></tr> <tr><td></td><td></td><td></td><td></td><td></td></tr> </table>																<table border="1"> <tr><td></td></tr> <tr><td></td></tr> <tr><td></td></tr> </table>			

**Step 21**

Protection				Notes/Issues		
To what extent is security considered when configuring and maintaining each class of components?				How do you know?		
Very Much	Somewhat	Not At All	Don't Know	Formal Techniques	Informal Means	Other

**Servers**

----- -----  <input type="checkbox"/>	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	
----- -----  <input type="checkbox"/>	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	
----- -----  <input type="checkbox"/>	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	

**Internal Networks**

----- -----  <input type="checkbox"/>	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	
----- -----  <input type="checkbox"/>	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	
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**On-Site Workstations**

----- -----  <input type="checkbox"/>	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	
----- -----  <input type="checkbox"/>	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	
----- -----  <input type="checkbox"/>	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	

**Laptops**

----- -----  <input type="checkbox"/>	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	
----- -----  <input type="checkbox"/>	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	
----- -----  <input type="checkbox"/>	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	

**PDAs/Wireless Components**

----- -----  <input type="checkbox"/>	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	
----- -----  <input type="checkbox"/>	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	
----- -----  <input type="checkbox"/>	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	

*Note*  
In Step 19a,  
mark the path to  
each class  
selected in Steps  
18a-18e.

Step 19a	Step 19b	Step 20																														
<p align="center"><b>Class</b></p> <p><i>Which classes of components are related to one or more critical assets?</i></p> <p><i>(Document any relevant subclasses or specific examples when appropriate.)</i></p>	<p align="center"><b>Critical Assets</b></p> <p><i>Which critical assets are related to each class?</i></p> <table border="1"> <tr><td></td><td></td><td></td><td></td><td></td></tr> <tr><td></td><td></td><td></td><td></td><td></td></tr> <tr><td></td><td></td><td></td><td></td><td></td></tr> <tr><td></td><td></td><td></td><td></td><td></td></tr> <tr><td></td><td></td><td></td><td></td><td></td></tr> <tr> <td align="center">1.</td> <td align="center">2.</td> <td align="center">3.</td> <td align="center">4.</td> <td align="center">5.</td> </tr> </table>																										1.	2.	3.	4.	5.	<p align="center"><b>Responsibility</b></p> <p><i>Who is responsible for maintaining and securing each class of components?</i></p>
1.	2.	3.	4.	5.																												
<p><b>Other Systems</b></p>	<table border="1"> <tr><td></td><td></td><td></td><td></td><td></td></tr> <tr><td></td><td></td><td></td><td></td><td></td></tr> <tr><td></td><td></td><td></td><td></td><td></td></tr> <tr><td></td><td></td><td></td><td></td><td></td></tr> </table>																					<table border="1"> <tr><td></td></tr> <tr><td></td></tr> <tr><td></td></tr> </table>										
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**Step 21**

<b>Protection</b>				<b>Notes/Issues</b>		
<i>To what extent is security considered when configuring and maintaining each class of components?</i>				<i>How do you know?</i>		
<i>What additional information do you want to record?</i>						
<b>Very Much</b>	<b>Somewhat</b>	<b>Not At All</b>	<b>Don't Know</b>	<b>Formal Techniques</b>	<b>Informal Means</b>	<b>Other</b>

**Other Systems**

----- -----  <input type="checkbox"/>	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	
----- -----  <input type="checkbox"/>	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	
----- -----  <input type="checkbox"/>	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	

**Storage Devices**

----- -----  <input type="checkbox"/>	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	
----- -----  <input type="checkbox"/>	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	
----- -----  <input type="checkbox"/>	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	

**External Networks**

----- -----  <input type="checkbox"/>	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	
----- -----  <input type="checkbox"/>	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	
----- -----  <input type="checkbox"/>	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	

**Home/External Workstations**

----- -----  <input type="checkbox"/>	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	
----- -----  <input type="checkbox"/>	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	
----- -----  <input type="checkbox"/>	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	

**Other \_\_\_\_\_**

----- -----  <input type="checkbox"/>	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	
----- -----  <input type="checkbox"/>	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	
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## 7 Probability Evaluation Criteria Worksheet

Phase 3

Process S4

Activity S4.2

**Step 23**

Define a qualitative set of measures (high, medium, low) against which you will evaluate the likelihood of a threat occurring.

**Step 23****Frequency-Based Criteria**

1. *Think about what constitutes a high, medium, and low likelihood of occurrence for threats to your organization's critical assets.*

<b>Time Between Events</b>	<b>Daily</b>	<b>Weekly</b>	<b>Monthly</b>	<b>Four Times Per Year</b>	<b>Two Times Per Year</b>
<b>Annualized Frequency</b>	365	52	12	4	2

2. Draw lines that separate high from medium and medium from low.

One Time Per Year	Once Every Two Years	Once Every Five Years	Once Every 10 Years	Once Every 20 Years	Once Every 50 Years
1	0.5	0.2	0.1	0.05	0.02



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